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| EXAMINER |
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DANIELS, MATTHEW J

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| ART UNIT | PAPER NUMBER |
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1732

DATE MAILED: 11/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/657,679

Applicant(s)

SERRAS ET AL.

Examiner

Matthew J. Daniels

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,6,8-15,17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,6,8-15,17 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 21 August 2006 has been entered. By entry of the amendment, Claim 16 is cancelled and Claim 18 is new.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. **Claim 12** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. As to **Claim 12**, there is no heating disclosed by the specification.

Claim Rejections - 35 USC § 102

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 18, 2, and 8** are rejected under 35 U.S.C. 102(b) as being anticipated by Revord (USPN 3809566). **As to Claim 18**, Revord teaches a method for manufacturing a building element based on plaster (plaster is gypsum, 1:10-15), comprising preparing a mixture (1:41-45) of plaster, water and filler (vermiculite, 6:28-50), placing said mixture in a mold (3:45-50), applying pressure to the mixture in the mold to obtain the building element (3:45-50, the article is inherently capable of being used as a building element), wherein the amount of pressure applied to the mixture in the mold and the quantity of water in the mixture are sufficiently high to prevent the plaster crystallization under pressure in the mixture (3:28-34, “then sets” in 3:29, which indicates it was not set or crystallized prior), and then unmolding the building element and allowing the plaster in the mixture to crystallize outside the mold (3:28-34, “then sets” in 3:29).

As to Claim 2, Revord teaches the conventionality of using 40 to 70 cc water (1 cc water = 1 gram) for 100 parts by weight of plaster or gypsum (1:64-69). **As to Claim 8**, Revord’s vermiculite (6:28-50) is inherently chemically inert with respect to the gypsum.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Rejections set forth previously under this section are withdrawn in view of the cancelled claims.

5. **Claims 18, 2, 6, 8, 12, 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brouard (USPN 5507996) in view of Randel (USPN 1901051) and Revord (USPN 3809566).

As to Claim 18, Brouard teaches a method for manufacturing a building element based on plaster (plaster is gypsum), comprising preparing a mixture of plaster, water and filler (sand, 6:15), placing said mixture in a mold (Figures), applying pressure to the mixture in the mold to obtain the building element (6:1-6), and then unmolding the building element.

Brouard appears to be silent to (a) the amount of pressure applied to the mixture in the mold and the quantity of water in the mixture being sufficiently high to prevent the plaster crystallization under pressure in the mixture, and (b) crystallizing outside the mold. However, these elements would have been obvious for the following reasons:

a) Firstly, Brouard discloses a compaction pressure of “about 100 kg/cm²” (6:6), which is the equivalent of about 98.07 bars, a value only slightly below the disclosed threshold pressure of “approximately 100 to 150 bars” (Applicant’s specification, 2:22). The Examiner asserts that the amount of pressure applied to the mixture of Brouard is sufficiently high to produce the claimed effect. Brouard also teaches that the quantity of water may be slightly greater than that required for optimal compactness of the mixture (5:20-25), and because crystallization occurs only after the compacting step (6:43-45), the quantity of water would obviously have been sufficiently high to prevent plaster crystallization while under pressure. Additionally or

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alternatively, Randel teaches that it is known to mold a mixture, also containing a ratio of plaster to water within the range disclosed by Applicant's Claim 2 (See Randel, page 4, left column, line 47), at a pressure of 4000 psi, which is greater than the pressure of 150 bars (equivalent to 2176 psi) claimed in instant Claim 12. Randel's teachings show that both the molding pressure (page 4, left column, lines 12-21) and amount of water (page 4, lines 28-58) represent result-effective variables. See MPEP 2144.05 II and *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to optimize these variables depending on the required pouring consistency and water absorption.

b) Secondly, Brouard teaches that only "about 70%" (2:19) of the complete hydration, and thus only a fraction of the total crystallization, occurs inside the mold. The Examiner asserts that Brouard's article would thus crystallize from about 70% to 100% outside the mold, and therefore the claimed step of crystallizing outside the mold is anticipated because about 30% of the article was yet to crystallize when the article was unmolded. Additionally or alternatively, this limitation is drawn purely to a difference in the order of performing process steps disclosed by Brouard, and any order of performing process steps disclosed in the prior art is generally considered to be prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04(IV)(c). Brouard teaches the expected result of unmolding a partially crystallized building block, namely "so as to reduce the force that needs to be provided for unmolding the building blocks and so as to reduce mold wear." (2:20-23). Additionally or alternatively, Revord teaches the claimed order, namely that setting of gypsum based building products can proceed after being ejected from a mold (3:17-34). Additionally, the Applicant's specification does not

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assert any unexpected results to be attributed to this change in the order of steps, and discloses that both orders of steps can be performed. See Page 3, lines 10-13.

As to Claim 2, Brouard teaches the claimed ratio of water to plaster (5:25-30). **As to Claim 6**, a two-step pressing process to reduce voids would have been obvious over Brouard's teachings at 5:57-28. Randel teaches that a higher pressure produces less absorption in the finished product (page 4, left column). **As to Claim 8**, Brouard teaches sand (5:27), which is inert. **As to Claim 12**, Randel's pressure exceeds the threshold pressure, and although Brouard appears to be silent to a temperature, the Examiner submits that the claimed temperature reads on room temperature, and therefore would have been prima facie obvious when combined with Randel's pressure. **As to Claim 17**, Brouard's mixture meets or suggests the claimed amounts (5:25-30).

6. **Claim 9-12 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brouard (USPN 5507996) in view of Randel (USPN 1901051), Revord (USPN 3809566), and further in view of Dailey (USPN 2571343). Brouard, Randel, and Revord teach the subject matter of Claim 18 above under 35 USC 103(a). **As to Claim 9**, Brouard, Randel, and Revord appear to be silent to a filler that is not inert with respect to the plaster. However, Dailey teaches organic fillers such as paper fiber, wood flour, hemp, and starch (1:30-38), and the Examiner takes the position that these substances would be at least partially "not chemically inert" with respect to the plaster. Dailey additionally teaches soluble potassium salts in order to control setting expansion (6:50-52), which also constitutes a filler that is "not chemically inert" with respect to the plaster. It would have been prima facie obvious to one of ordinary skill in the art

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at the time of the invention to incorporate the method of Dailey into that of Brouard, Randel, and Revord in order to produce a dense, strong and tough cast (4:45-50) because of its reinforcement (1:36) requiring no drying (4:24-35). **As to Claims 10 and 11**, Dailey teaches the beneficial aspects of melamine (2:20-25). It would have been further prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate Dailey's method in order to provide "the very desirable characteristic of decreasing the amount of water required to be mixed with the alpha gypsum to produce a mix of pourable of fluid consistency." (2:15-19). **As to Claim 12**, Dailey teaches that temperature is a result effective variable (2:34-43). See MPEP 2144.05 II and *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Additionally, because 15 to 20 degrees C is approximately room temperature, and because Brouard teaches substantially the claimed pressure, the particular conditions would have been prima facie obvious. **As to Claim 14**, Dailey teaches the beneficial aspects of melamine (2:20-25). It would have been further prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate Dailey's method in order to provide "the very desirable characteristic of decreasing the amount of water required to be mixed with the alpha gypsum to produce a mix of pourable of fluid consistency." (2:15-19).

7. **Claims 13 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brouard (USPN 5507996) in view of Randel (USPN 1901051), Revord (USPN 3809566), and further in view of Jagdmann (USPN 1925050). Brouard, Randel, and Revord teach the subject matter of Claim 18 above under 35 USC 103(a). **As to Claims 13 and 15**, Brouard teaches a cavity, produced by a core (3:50-65, 4:51-60). Brouard appears to be silent to the rod or

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particular shape, however, Jagdmann teaches driving at least one element with a reduced cross section into the mixture in the mold and guiding and driving a rod axially in translation into the mixture (Page 1, lines 40-45, also see Page 4, lines 70-92 and Figs. 7 and 8). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Jagdmann into that of Brouart, Randel, and Revord in order to provide a more uniform size and density (Page 1, lines 1-55).

Response to Arguments

8. Applicant's arguments filed 21 August 2006 have been fully considered but they are not persuasive. The arguments appear to be on the following grounds:

- a) New Claim 18 now recites that the pressure and the water content are sufficiently high to prevent plaster crystallization in the mixture under pressure in the mold.
- b) This sentence (in the specification at 2:25-3:2) clearly means that both the pressure applied and the quantity of water must be sufficiently high to prevent the plaster crystallization.
- c) Brouard indicates that the plaster has to be hydrated to about 70%-90% inside the mold, which produces a smaller crystal size and the pressure inside the mold is very high at the beginning of unmolding.
- d) Revord teaches 20% water or less, and crystallization is not prevented, and presents the same drawbacks as Brouard, namely the volumetric expansion.
- e) The combination of pressure and water mentioned by Randel is to reduce the water absorption when the product is dried, not for preventing plaster crystallization. The plaster crystallization of

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Randel is re-initiated immediately when the pressure is no longer applied to the mixture. Randel was unable to know whether the plaster crystallization was prevented in the mold or not.

9. These arguments are not persuasive for the following reasons:

a) This new claim is rejected under 35 USC 102(b) (Revord) and 35 USC 103(a) (Brouard in view of Revord and Randel).

b and c) Brouard provides a pressure of *about* 98.07 bars, extremely close to the *approximately* 100 bars disclosed by the specification at 2:22. Crystallization subsequently followed in Brouard's method after the release of pressure. It is unclear how it is asserted that crystallization is not prevented by Brouard by its substantial similarity in pressure and crystallization *after release of the pressure*. Note also that Brouard includes excess water (5:20-25). Additionally, Applicant's remarks appear to assume that crystallization is instantaneous, and that only the initiation of crystallization reads on the claimed limitation to "crystallize outside the mold." The Examiner disagrees. Brouard's teaches that the article is crystallized partly in the mold, but the Examiner asserts that the remaining crystallization would inherently follow after unmolding the article. This teaching reads on the claimed limitation of crystallizing outside the mold. The crystal size argued in the remarks is not claimed, nor has it been set forth as evidence of an unexpected and different result.

d) Revord teaches that crystallization occurs outside the mold (see "then sets" at 3:28-31), which indicates that the prevention of crystallization under pressure must have been inherent. Notably, Revord teaches that the rearrangement of steps disclosed by the prior art is known, anticipating the independent claim.

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e) Randel and Applicant appear to have come to substantially the same result, the only difference being that Randel recognizes the results in the product, and that Applicant has recognized an asserted difference in the process. However, this does not show the unexpected results of the claimed process over those of Randel.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Daniels whose telephone number is (571) 272-2450. The examiner can normally be reached on Monday - Friday, 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJD 10/27/06




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SUPERVISORY PATENT EXAMINER
10/30/06